

# PATENT SPECIFICATION

## DRAWINGS ATTACHED

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### COMPLETE SPECIFICATION

#### A Method of and an Apparatus for Treating the Surface of Meat Pieces

I, POUL WITTIG, a Danish Subject of Kongebakken 48, Roskilde, Denmark, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a method of treating the surface of pieces of meat with a view to making them suitable for being united into larger pieces by adhesion.

It is well known to unite two or more smaller pieces of meat by adhesion so as to form a larger piece of meat or to unite the parts of a piece of meat that has been cut open for removal of bones so that the the surfaces of the cut adhere to each other when the meat is folded. Where the heat is intended for slicing, it is particularly important to ensure that the slices do not fall apart.

To give the surface of the pieces of meat the necessary adhesive qualities the meat cells have to be opened so that the protein meat juice gets to the surface, and by its subsequent coagulation, produced by heating, provides the adhesive effect.

It is known to treat the surface of pieces of meat with a steel spiked brush. When the spikes of the brush are passed across the meat surface the meat cells are torn open so that the meat juice gets to the surface and renders the adhesion possible. However, this method has the drawback that either it is only the highest points of the meat surface that are treated, or it involves excessive tearing of the meat at its highest points if the spikes are to get down to the lowermost points of the meat surface to give the latter a suitable treatment. This drawback may be avoided by rubbing minced meat over the meat surfaces to be joined but this operation is not a very efficient one,

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The method according to the present invention avoids the drawbacks of the known methods, and consists in whipping the surfaces of the pieces of meat by means of cords of a flexible material, such as rubber or plastic. The result obtained is a uniform treatment of the whole surface, the strokes or whips imparted by the cords being sufficient to cause the cells to burst, but at the same time the cords are deflected by the resistance encountered, whereby both the high and the low points of the meat surface are treated to the same depth.

The invention is furthermore concerned with an apparatus for carrying the method described into effect. This apparatus comprises a rotatably mounted shaft to which are attached cords of flexible material. The pieces of meat to be treated may then be kept at barely within the cord's length of the shaft while the shaft is rotating, so that the meat surface will be struck or whipped by the cords. The apparatus need not necessarily be fixed or stationary; it may, if desired, be designed as a tool which is applied against or passed over stationary pieces of meat.

It has been found that the most uniform treatment of the meat surfaces is obtained when the meat moves concurrently with the cords. In a particular embodiment of the apparatus according to the invention that is suitable for giving this treatment the shaft is mounted horizontally above a conveyor at a distance therefrom which is greater than the length of the cords.

In order that the invention may be more readily understood, reference will now be made to the accompanying drawing, in which:—

Figure 1 shows a preferred embodiment of an apparatus according to the invention,

Figure 2 is a cross-section of the shaft of the apparatus of Figure 1, in its stationary

condition with two cords being shown,

Figure 3 is a cross-section of the shaft shown in Figure 2 during rotation, and

5 Figure 4 is a longitudinal section of the shaft while rotating.

The apparatus consists of a table 1 with a surface formed as an endless conveyor belt 2. At a suitable level above the said conveyor belt is mounted a rotatable shaft 4 beneath a  
10 guard 3, to which shaft are attached a number of cords 5 of a flexible material for example, rubber or plastic. When the shaft is stationary the cords are suspended as indicated in Figure 2, but when the shaft is  
15 rotating at high speed the cords will straighten themselves as shown in Figures 3 and 4 so as to whip a piece of meat 6 which is advanced on the conveyor belt 2 concurrently with the movement of the cords. The  
20 cords are deflected when striking the meat so that they cannot penetrate the meat to any substantial depth, but only cause the cells in a thin surface layer to burst. The length of each cord is slightly less than the distance  
25 between the shaft and the conveyor belt, but the cords need not all be of exactly identical length.

#### WHAT I CLAIM IS:—

1. A method of treating the surface of pieces of meat, wherein the surfaces of the  
30 pieces of meat are whipped by means of cords of a flexible material.

2. An apparatus for carrying out the method according to Claim 1, comprising a rotatably  
35 mounted shaft to which are attached cords of a flexible material.

3. An apparatus as claimed in Claim 2, wherein the shaft is mounted horizontally above a conveyor at a distance from same  
40 which is greater than the length of the cords.

4. An apparatus as claimed in claim 3, wherein the conveyor, during the whipping operation, is moveable in the same general  
45 direction as the cords when they engage the pieces of meat.

5. Apparatus for treating the surface of pieces of meat, substantially as hereinbefore described with reference to the accompanying drawing.

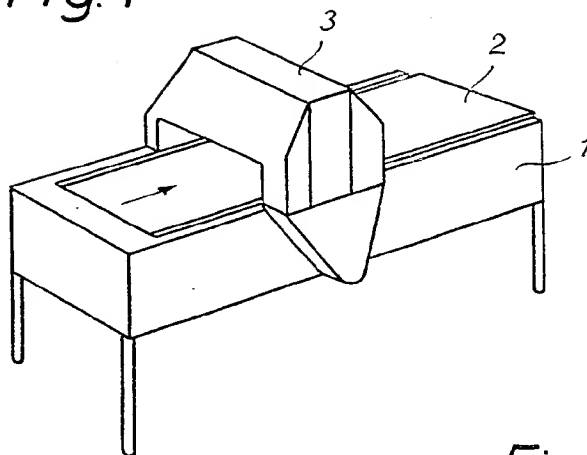
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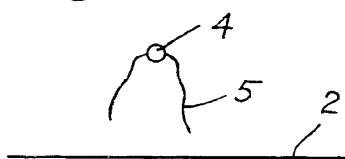
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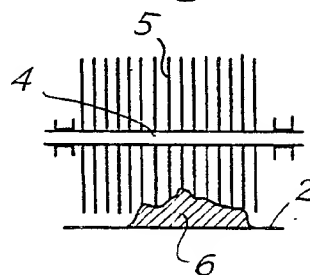
*Fig. 1*



*Fig. 2*



*Fig. 4*



*Fig. 3*

